



Operation and Maintenance Manual

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Chapter 1

Introduction

1. Manufacturer

- a. The Enforcer 60 is Manufactured by:

Enforcer One, LLC

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Fayetteville, GA 30214

United States of America

Phone: (678) 788-8413

Fax: (678) 788-8415

E-mail: Info@enforcerone.com

Website: www.enforcerone.com

- b. EnforcerOne is committed to the satisfaction of our owners and operators of the Enforcer 60. If you have any problems, questions, or concerns please contact EnforcerOne via phone, Fax, or E-mail.

2. Warranty



Limited Warranty

CAUTION: User should read and follow all Safety Rules and Operating Instructions BEFORE first use of this product!

Enforcer One, LLC warrants to the original owner–user that Enforcer One, LLC products will be free from failures due to defects in workmanship for a period of thirty years from the date of original purchase. During the warranty period, Enforcer One, LLC, at its sole discretion, will repair or replace at no charge, the product that, in its sole opinion, is defective.

The purchaser is responsible for packing the product for shipment and for charges to ship the product to the location specified by Enforcer One, LLC, including, at the purchasers sole discretion, insurance on the shipment. Enforcer One, LLC will return the product pre–paid to the purchaser.

If the product has been altered, modified or repaired in any way, or if the failure is the result of misuse, abuse or misapplication without the prior consent of Enforcer One, LLC, this warranty shall be void and Enforcer One, LLC shall have no obligation to repair or replace the failed

The use of any foam product other than FireAde ®²⁰⁰⁰ products will void the warranty.

Warranty – continued

When used in conjunction with sound fire management practices and strictly as per the manufacturer’s instructions, the products may provide protection against anticipated fires and may accelerate the extinguishing of existing fires.



CAUTION: The unpredictable nature of fires, the techniques used to apply product(s) as well as the knowledge–understanding and judgment of the individual(s) attempting to extinguish or control

THIS WARRANTY IS THE SOLE AND EXCLUSIVE WARRANTY FOR Enforcer One, LLC PRODUCT(S) AND DISCLAIMS AND EXCLUDES ANY AND ALL IMPLIED WARRANTIES REGARDING THE PRODUCT(S) INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

No person or entity is authorized to bind Enforcer One, LLC to any other warranty obligation or liability to distributor, purchaser or any third party for any loss of profits, economic loss, indirect, incidental, punitive, special or consequential damages whatsoever and howsoever caused. Operation or use of this or any Enforcer One, LLC product for which this warranty is issued shall constitute acceptance of the terms hereof.



CAUTION: Prior to attempting to operate this or any Enforcer One, LLC product, you MUST read and understand all directions and instructions in this user manual. Until you have read and understand all CAUTIONS; Warnings, Requirements, Instructions for Set-up & Testing – Operation and Maintenance: NO ATTEMPT should be made to operate this or any Enforcer One, LLC product. In order to assure that your Enforcer One, LLC product(s) are ready when needed, they must be regularly maintained as outlined. FAILURE TO COMPLY WITH ALL CAUTIONS, WARNINGS, REQUIREMENTS, INSTRUCTIONS,

SAFE OPERATING REQUIREMENTS

1. **DO NOT** attempt to use this or any Enforcer One, LLC product(s) if they appear damaged and/or broken. Missing or damaged components MUST be properly repaired or replaced as soon as possible.

Safe Operating Requirements – continued

2. **DO NOT** attempt to use this or any Enforcer One, LLC product(s) if you are tired, injured or under the influence of drugs, medication or alcohol.
3. **DO** keep children and bystanders away from the area where Enforcer One, LLC product(s) are in-use.
4. **DO NOT** attempt to use this or any Enforcer One, LLC product(s) in the event that the fire represents a situation that is beyond the capabilities of the Operator and/or the Equipment.

5. **DO** follow the proper Set-up, Testing, and Maintenance & Inspection Procedures to assure that your Enforcer One, LLC product(s) is/are ready for use when needed.
6. **DO** exit the area IMMEDIATELY if progress in fighting the fire is not being made and **DO NOT** return to the area.
7. **DO** comply with all local Laws & Regulations related to the proper use, installation, maintenance, training and inspection of Fire-Fighting Equipment.



WARNING: The act of fighting fire is both hot and dangerous work. Smoke, heat, unseen fumes/gases and flames can be easily underestimated. In the absence of the proper training, protective gear and clothing, extreme caution should be exercised to avoid serious injury or death. If ever, in an attempt to extinguish a fire, you are unsure that progress is being made, contain the fire (if possible) and move quickly and safely away from the threat.

ADDITIONAL INFORMATION

<http://www.usfa.fema.gov/safety/sheets.htm>

<http://www.nfpa.org/education/index.html>

<http://www.ilpi.com/safety/extinguishers.html>

3. Manual Changes

1. EnforcerOne will provide equipment update changes to this manual on an as need basis.

2. This manual and associated updates will be posted on the EnforcerOne web site.
3. This manual supersedes all previous Operating Instructions for the Enforcer 60 system.

Enforcer is a registered trademark of EnforcerOne, LLC
FireAde® is a registered trademark of Fire Service Plus, Inc

Chapter 2

System Description

2-1. General Information

The Enforcer 60 Compressed Air Foam System utilizes compressed nitrogen to propel firefighting foam. Enforcer 60 produces air aspirated foam providing a thick vapor sealing blanket that will inhibit re-ignition. The Enforcer 60 will produce up to 600 gallons of finished foam with discharge duration of up to 4. ½ minutes. The system can be easily recharged by the end user.

2-2. Model Configuration

The Enforcer 60 consists of a Premix Tank which holds 60 gallons of pre-mixed Fireade®²⁰⁰⁰. Two compressed nitrogen cylinders are attached to the Premix Tank through a regulator and hose assembly. One 50' section of lay flat hose and one pistol grip style Nozzle.

2-3. Specifications

- **Height:** 38.5 " (97.79 cm) **Length:** 54.5" (138.34 cm) **Depth:** 42" (106.68 cm.)
- **Empty Weight:** 495 lbs. (224.5 kg) **Loaded Weight:** 995lbs. (451.3 kg)
- **Premix Tank:** 60 US Gallons (227 l)
- **Finished Foam Capacity:** 1200 US Gallons (6814 l)

- **Foam Discharge Distance:** Up to 95 Feet (29 m)
- **Nitrogen Cylinders:** 90 cu. ft. 2200 psi (151.6 bar)
- **Recharge Time:** 3-5 minutes

2-4. Transporting

The Enforcer 60 should be secured when transporting in trailers or vehicles.

Chapter 3

Operating Instructions

3-1. Initial Setup

The Enforcer 60 comes fully assembled. The **60 gallon Premix Tank** and **Compressed Nitrogen Cylinder** must be filled prior to use. The proper FireAde®²⁰⁰⁰ product should be selected based on operational ambient temperatures and type of anticipated fires before putting the unit into service.

3-2. Fireade®²⁰⁰⁰ Products

- Enforcer 60 should only be used with Fireade®²⁰⁰⁰ products mixed at a 3% or 6% solution.
- It is recommended that a Fireade®²⁰⁰⁰ Freeze Protected Product be used when positioning the unit outside during extended subfreezing weather.

3-3. System Depressurization

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**Ensure the system is depressurized before
conducting maintenance**

- a. Close the Nitrogen Cylinder Valves.
- b. Open nozzle until all Nitrogen is deployed and working pressure gauge reads **zero** or open Pressure Relief Valve.

3-4. Preventative Maintenance Checks & Services (PMCS)

- a. It is recommended that the PMCS CHECKLIST be completed every month.
- b. Personnel conducting the PMCS should be thoroughly familiar with the Enforcer 60 system and the information contained in this manual.

Form E3PMCS

Preventative Maintenance Checks and Services (PMCS)



Checklist

Date Completed _____

Name _____

Signature _____

- _____ 1. Conduct a visual inspection of the system for chaffing or loose hose(s), dirt, corrosion or damage.

_____ 2. Check the Nitrogen Cylinder for normal operating pressure (1800–2200 psi).

- a. Ensure System is depressurized.
- b. Disconnect Nitrogen Cylinders and pull out of unit.
- c. Connect Nitrogen Cylinder Pressure Check Gauge.
- d. Open Nitrogen Cylinder and check for normal operating pressure. (1800– 2200psi)
- e. Close Nitrogen Cylinder and slowly disconnect Pressure Check Gauge allowing for pressure bleed off.
- f. If the Nitrogen Cylinder pressure is below 1500 psi remove, recharge and replace the Nitrogen Cylinder.

The Nitrogen Cylinder should normally be left in the closed position.

_____ 3. Check the Premix Tank Level

- a. Disconnect fill tower Cap check liquid level.
- b. Fill up the Premix Tank if low.

_____ 4. Check the tire condition.

Note any other Problems:

3-5. Operating Instructions



Warning
Always refer to the product MSDS for proper precautions and treatment(s) if foam is accidentally ingested or sprayed in eyes, mouth or nose

- a. Extend hose ensure the Nozzle and the Foam Discharge Valve are in the closed position.
- b. Charge the system by turning the Nitrogen Cylinder Valves counter clockwise.

- c. Open the Foam Discharge Valve slowly to the full open position.
- d. Grasp the nozzle with hand.
- e. Aim the nozzle at the base of the fire and open valve to discharge foam.

3-6. Cold Weather Operations

- a. **It is recommended that FireAde® 2000 Climate Control Premix foam is used when freezing is anticipated.**

3-7. Emergency Procedures

a. Loose Hose

- 1. Go to the unit and close the Foam Discharge Valve.
- 2. Go to the Nozzle and close the valve.

b. No Foam Discharge

- 1. Check to see if Nitrogen Cylinder is full.
- 2. Verify the Nitrogen Cylinder Valve is turned completely on.
- 3. Ensure Nitrogen Pressure Hose is attached properly.
- 4. Check for obstruction in discharge hose.

c. Shut Down Procedures

- 1. Close the Nozzle Valve.
- 2. Close the Nitrogen Cylinder Valve.
- 3. Open Nozzle valve to depressurize the system or open Pressure Relief Valve.
- 4. Secure discharge hose.

Chapter 4

Training

4-1. Training Program

- a. Training on the Enforcer 60 should be conducted or reviewed annually for all operators
- b. Maintenance personnel should complete initial training and refresher training as required
- c. Trainers should be thoroughly familiar with the system, fire behavior, hazard identification, and basic firefighting techniques
- d. Operator training should be accomplished in live fire scenarios. Live fire training can often be accomplished through coordination with a local fire department.

4-2. Training Program of Instructions

a. Operators and Maintenance Personnel

- 1. PMCS
- 2. Normal and Cold Weather Operating Instructions
- 3. Emergency Procedures
- 4. Operation in live fire scenario

b. Maintenance Personnel

- 1. General Maintenance
- 2. Instructions and Technical Assistance
- 3. Foam Product
- 4. Maintenance Log
- 5. Servicing Under Normal and Cold Conditions
- 6. Scheduled Maintenance
- 7. Unscheduled Maintenance
- 8. Troubleshooting Procedures
- 9. Storage and Protection

Chapter 5

Maintenance

5.1 General Instructions

- a. It is recommended that the preventative and maintenance (PMCS) be conducted monthly.
- b. It is recommended that qualified personnel be assigned the responsibility to
service and maintain the system
- c. All maintenance activity should be documented and should include copies of the completed PMCS Checklist, Premix Tank Filling Calendar, type/ ratio of product used, component changes and any other problems encountered. A MSDS should be maintained for the type of foam being used.

5-2. Technical Assistance

Maintenance personnel should contact EnforcerOne whenever any problem arises that cannot be solved using the information in this manual or when unusual situations are encountered or expected.

Enforcer 60 Maintenance Log

Preventative Maintenance Checks and Services (PMCS)

Refer to Chapter 5 – Maintenance for specific activities

Maintenance Activity	Date Completed	Performed By	Notes/Comments

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Scheduled Maintenance

Form E60PMCS

Maintenance Activity	Recommended Interval	Date Due	Date Completed	Performed By:
Nitrogen Cylinder Pressure Check	Every 6 months			
Nitrogen Cylinder – Visual Inspection	Annually			
Nitrogen Regulator Inspection	Every 2 years			
Nitrogen Cylinder Hydrostatic Test	Every 5 Years			
Premix Cylinder and Discharge Hose Hydrostatic Test	Every 5 Years			

Unscheduled Maintenance

Maintenance Activity	Date Completed	Performed By	Comments/Notes

5-7. Servicing Under Normal Conditions

a. System Pressure Check

1. Make sure that the Fill Tower Cap is secure, the Foam Discharge Valve and Pressure Relief Valve are closed.
2. **Open** the Nitrogen Cylinder Valve and check the Nitrogen pressure on the **High Pressure Gauge** for **normal operating pressure of 1800-2200psi**.
3. Check the **Working Pressure Gauge** is in the **normal operating position 150psi**.
4. Conduct a leak check if the High Pressure Gauge reads **below 1500 psi** or if the Working Pressure Gauge reads **below 150 psi**.
 - a. Spray a soap solution on all airlines/fittings.
 - b. Tighten leaking fittings, replace O-rings, or replace defective components
5. Bleed off any stored pressure through Pressure Relief Valve.

b. Changing and Servicing Nitrogen Cylinder




Ensure the system is depressurized before conducting maintenance on the system. Extreme care should be used when transporting the Nitrogen Cylinder(s).

1. Ensure Nitrogen Cylinder Valves are closed
2. Depressurize the system
3. Lift out the Nitrogen Cylinders
4. Have the Nitrogen Cylinders filled to 2200 psi by a certified technician
5. Replace the Nitrogen Cylinders in the holder
6. Reconnect the Nitrogen Cylinders

c. Refilling the Premix Tank

1. Close the Nitrogen Cylinder Valves
2. Ensure System is depressurized

3. Remove Fill Tower Cap
4. Add water until Premix Tank is full
5. Add appropriate amount of foam using funnel allowing clear water to be displaced from top of Premix Tank
6. Replace Fill Tower Cap ensuring it is tightened properly
-  7. **Important Note: The Fill Tower Cap should be tightened by hand.**

Refilling the Premix Tank – continued

5–8. Servicing In Cold or Freezing Conditions

Fill the Premix Tank with FireAde®²⁰⁰⁰ Freeze Protected Foam solution whenever temperatures are below 32 degrees Fahrenheit. Freeze Protected Foam should be used in the concentrate form in cold or freezing temperature conditions.

5–9. Scheduled Maintenance Interval Recommendations

Component	Maintenance Activity and Recommended Interval
Nitrogen Cylinder	<ul style="list-style-type: none"> • Check pressure – every 6 months • Visual inspection and certification – annually • Hydrostatic testing – every 5 years
Cleaning	<ul style="list-style-type: none"> • Wash with soap and water – minimum annually
Nitrogen Regulator	<ul style="list-style-type: none"> • Check Operation – every 2 years
Premix Tank & Discharge Hose	<ul style="list-style-type: none"> • Pressurize and check for leaks – annually • Hydrostatic testing should be completed every 5 years

Foam Solution	<ul style="list-style-type: none"> • Follow Foam Manufacturer quality testing recommendations
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5-10. Unscheduled Maintenance

Unscheduled maintenance will need to be performed as required.

5-11. Trouble Shooting the System

Users should contact Enforcer One if malfunctions cannot be corrected after employing good troubleshooting practices. Use the matrix on page 17 for assistance.

Trouble Shooting Matrix

Problem or Symptom	Possible Solution
No Pressure on Gauges	<ul style="list-style-type: none"> • Nitrogen Cylinder Valve is not turned on • Nitrogen Cylinder is empty • Pressure Gauge is inoperative • Broken or blocked air hose • Nitrogen Regulator has malfunctioned

Foam Does Not Discharge From Hose	<ul style="list-style-type: none"> • Premix Tank is empty • Nitrogen Cylinder is empty • Nitrogen Cylinder is not turned on • Nozzle is in the off position • Nozzle valve has malfunctioned • Blockage on dispensing hose • Foam solution is frozen
Nitrogen line Leak	<ul style="list-style-type: none"> • Nitrogen hose fittings are loose or broken • Nitrogen line is pinched, cracked or broken
System is Not Fully Discharging	<ul style="list-style-type: none"> • There is insufficient volume of Nitrogen in the Nitrogen Cylinder • The Foam Discharge Nozzle is not fully opening • The Foam Discharge Hose has a restriction • The Nitrogen Regulator has a malfunction • The Foam solution is frozen or near freezing • There is a blockage in the Premix Tank

5-12.Storage and Protection

- a. The Enforcer 60 does not have any special storage requirements if stored inside.
- b. A protective cover is recommended and should be used if the equipment is stored outside as this will reduce sun damage to hoses and gauges.

Chapter 6

6-1. Pictures

